

a) a room shielded from electromagnetic interference, which includes a viewing window;

b) a system controller external to the shielded room;

c) a patient infusion apparatus within the shielded room and including infusion apparatus control means for controlling an infusion operation;

d) a communicating control link between the system controller and the infusion apparatus control means, wherein the communicating control link is adapted to be substantially non-reactive with the magnetic resonance imaging system; and

e) a power source operably connected at least to the patient infusion apparatus to provide power thereto.

In addition, please add the following new claims 79-116:

79. (New) The patient infusion system of claim 8, further comprising:

a power source operably connected at least to the patient infusion apparatus to provide power thereto.

80. (New) The patient infusion system of claim 79, wherein the power source comprises at least one battery.

81. (New) The patient infusion system of claim 80, wherein the battery is rechargeable.

82. (New) The patient infusion system of claim 9, wherein the power source comprises at least one battery.

83. (New) The patient infusion system of claim 82, wherein the battery is rechargeable.

84. (New) The patient infusion system of claim 13, further comprising:

a power source operably connected at least to the electric drive motor to provide power thereto.

85. (New) The patient infusion system of claim 84, wherein the power source comprises a battery.

86. (New) The patient infusion system of claim 85, wherein the battery is rechargeable.

87. (New) The method of claim 22, further comprising:

operatively connecting the electric motor to a power source.

88. (New) The method of claim 87, wherein the power source comprises at least one battery.

89. (New) The method of claim 88, wherein the battery is rechargeable.

90. (New) The method of claim 23, further comprising:

operably connecting the patient infusion apparatus to a power source.

91. (New) The method of claim 90, wherein the power source comprises at least one battery.

92. (New) The method of claim 91, wherein the battery is rechargeable.

93. (New) The patient infusion system of claim 63, further comprising:

a power source operably connected at least to the injection control unit to provide power thereto.

94. (New) The patient infusion system of claim 93, wherein the power source comprises at least one battery.

95. (New) The patient infusion system of claim 94, wherein the battery is rechargeable.

96. (New) The patient infusion system of claim 70, further comprising:

a power source operably connected at least to the injection control unit to provide power thereto.

97. (New) The patient infusion system of claim 96, wherein the power source comprises at least one battery.

98. (New) The patient infusion system of claim 97, wherein the battery is rechargeable.

99. (New) A patient infusion system for use with a magnetic resonance imaging system comprising a room shielded from electromagnetic interference and a control room, the patient infusion system comprising:

a first control unit positioned within the control room;

an infusion apparatus positioned within the shielded room, the infusion apparatus comprising:

an injector for injecting fluid into a patient during a magnetic resonance imaging procedure; and

a second control unit operably connected to the injector;

a control link between the first control unit and the second control unit, the control link adapted to be substantially non-reactive with the magnetic resonance imaging system; and

a power source operably connected to the infusion apparatus.

100. (New) The patient infusion system of claim 99, wherein the injector is adapted to accommodate two syringes mounted thereon for injecting fluid into a patient.

101. (New) The patient infusion system of claim 99, wherein the power source comprises at least one battery.

102. (New) The patient infusion system of claim 101, further comprising:
a battery charger positioned within the control room.

103. (New) The patient infusion system of claim 99, wherein the control link comprises a fiber optic link.

104. (New) The patient infusion system of claim 99, wherein the second control unit comprises at least one motor.

105. (New) The patient infusion system of claim 99, wherein the second control unit is shielded to prevent interference with the magnetic resonance imaging system.

106. (New) A patient infusion system for use with a magnetic resonance imaging system to generate images of a patient, the patient infusion system comprising:

a) a room shielded from electromagnetic interference by an electromagnetic shield including a viewing window;

b) a system controller located outside the room;

c) a patient infusion apparatus located inside the room including infusion apparatus control means for controlling an infusion operation;

d) a communications link between the system controller and the infusion apparatus control means; and,

e) an electric drive motor and motor control circuitry separated from the patient infusion apparatus and a non-rigid drive connection between the electric drive motor and the patient infusion apparatus whereby the motor is positioned to be substantially non-reactive with the imaging system.

107. (New) The patient infusion system of claim 106, wherein the communications link comprises an external transceiver located outside the room and an internal transceiver located inside the room, both said transceivers communicating electromagnetic energy through the viewing window in the room.

108. (New) The patient infusion system of claim 107, wherein the electromagnetic energy communicated between said transceivers is in the visible light spectrum.

109. (New) The patient infusion system of claim 107, wherein said electromagnetic energy communicated between said transceivers is in the infrared spectrum.

110. (New) The patient infusion system of claim 106, further comprising a rechargeable battery located in the room and connected to the electric drive motor for providing power to the electric drive motor.

111. (New) The patient infusion system of claim 106, wherein the electric drive motor and motor control circuitry are enclosed within the electromagnetic shield.

112. (New) The patient infusion system of claim 106, wherein the infusion apparatus control means is adapted to be located at least ten to fifteen feet from the patient.

113. (New) The patient infusion system of claim 106, wherein the non-rigid drive connection is comprised of hard brass.

114. (New) The patient infusion system of claim 106, wherein the patient infusion apparatus is adapted to be located in close proximity to the patient.

115. (New) The patient infusion system of claim 34, wherein the communication link is adapted to be substantially non-reactive with the imaging system.

116. (New) The patient infusion system of claim 53, wherein the communication link is adapted to be substantially non-reactive with the imaging system.